

Commercial Space Transportation, FAA, DOT

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of expendable or reusable launch vehicle planned to be flown from the launch point can be flown from the launch point safely.

(c) If an applicant proposes to have more than one weight class of orbital

expendable launch vehicles flown from a launch point, the applicant shall demonstrate that the heaviest weight class planned to be flown from the launch point can be flown from the launch point safely.

TABLE 1 OF § 420.19—ORBITAL EXPENDABLE LAUNCH VEHICLE CLASSES BY PAYLOAD WEIGHT (LBS)

100 nm orbit	Weight class			
	Small	Medium	Medium large	Large
28 degrees inclination *	≤4400	>4400 to ≤11100	>11100 to ≤18500	>18500
90 degrees inclination	≤3300	>3300 to ≤8400	>8400 to ≤15000	>15000

* 28 degrees inclination orbit from a launch point at 28 degrees latitude.

§ 420.21 Launch site location review—launch site boundary.

(a) The distance from any proposed launch point to the closest launch site boundary must be at least as great as the debris dispersion radius of the largest launch vehicle type and weight class proposed for the launch point.

(b) For a launch site supporting any expendable launch vehicle, an applicant shall use the largest distance provided by table 2 for the type and weight

class of any launch vehicle proposed for the launch point.

(c) For a launch site supporting any reusable launch vehicle, an applicant shall determine the debris dispersion radius that represents the maximum distance from a launch point that debris travels given a worst-case launch vehicle failure in the launch area. An applicant must clearly and convincingly demonstrate the validity of its proposed debris dispersion radius.

TABLE 2 OF § 420.21—MINIMUM DISTANCE FROM LAUNCH POINT TO LAUNCH SITE BOUNDARY (FEET)

Orbital expendable launch vehicle class			Type of suborbital launch vehicle		
Small	Medium	Medium large	Large	Guided	Unguided
7300	9300	10600	13000	8000	1600

§ 420.23 Launch site location review—flight corridor.

(a) *Guided orbital expendable launch vehicle.* For a guided orbital expendable launch vehicle, an applicant shall define a flight corridor that:

(1) Encompasses an area that the applicant estimates, in accordance with the requirements of this part, to contain debris with a ballistic coefficient of ≥3 pounds per square foot, from any non-nominal flight of a guided orbital expendable launch vehicle from the launch point to a point 5000 nm downrange, or where the IIP leaves the surface of the Earth, whichever is shorter;

(2) Includes an overflight exclusion zone where the public risk criteria of 30×10^{-6} would be exceeded if one person were present in the open; and

(3) Uses one of the methodologies provided in appendix A or B of this part. The FAA will approve an alternate method if an applicant provides a clear and convincing demonstration that its proposed method provides an equivalent level of safety to that required by appendix A or B of this part.

(b) *Guided sub-orbital expendable launch vehicle.* For a guided sub-orbital expendable launch vehicle, an applicant shall define a flight corridor that:

(1) Encompasses an area that the applicant estimates, in accordance with the requirements of this part, to contain debris with a ballistic coefficient of ≥3 pounds per square foot, from any non-nominal flight of a guided sub-orbital expendable launch vehicle from the launch point to impact with the earth's surface;

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(2) Includes an impact dispersion area for the launch vehicle's last stage;

(3) Includes an overflight exclusion zone where the public risk criteria of 30×10^{-6} would be exceeded if one person were present in the open; and

(4) Uses one of the methodologies provided in appendices A or B to this part. The FAA will approve an alternate method if an applicant provides a clear and convincing demonstration that its proposed method provides an equivalent level of safety to that required by appendix A or B of this part.

(c) *Unguided sub-orbital expendable launch vehicle.* (1) For an unguided sub-orbital expendable launch vehicle, an applicant shall define the following using the methodology provided by appendix D of this part:

(i) Impact dispersion areas that the applicant estimates, in accordance with the requirements of this part, to contain the impact of launch vehicle stages from nominal flight of an unguided sub-orbital expendable launch vehicle from the launch point to impact with the earth's surface; and

(ii) An overflight exclusion zone where the public risk criteria of 30×10^{-6} would be exceeded if one person were present in the open.

(2) The FAA will approve an alternate method if an applicant provides a clear and convincing demonstration that its proposed method provides an equivalent level of safety to that required by appendix D of this part.

(3) An applicant shall base its analysis on an unguided suborbital launch vehicle whose final launch vehicle stage apogee represents the intended use of the launch point.

(d) *Reusable launch vehicle.* For a reusable launch vehicle, an applicant shall define a flight corridor that contains the hazardous debris from nominal and non-nominal flight of a reusable launch vehicle. The applicant must provide a clear and convincing demonstration of the validity of its flight corridor.

§ 420.25 Launch site location review—risk analysis.

(a) If a flight corridor or impact dispersion area defined by section 420.23 contains a populated area, the applicant shall estimate the casualty expect-

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tation associated with the flight corridor or impact dispersion area. An applicant shall use the methodology provided in appendix C to this part for guided orbital or suborbital expendable launch vehicles and appendix D for unguided suborbital launch vehicles. The FAA will approve an alternate method if an applicant provides a clear and convincing demonstration that its proposed method provides an equivalent level of safety to that required by appendix C or D of this part. For a reusable launch vehicle, an applicant must provide a clear and convincing demonstration of the validity of its risk analysis.

(b) For licensed launches, the FAA will not approve the location of the proposed launch point if the estimated expected casualty exceeds 30×10^{-6} .

[Docket No. FAA–1999–5833, 65 FR 62861, Oct. 19, 2000, as amended by Amdt. 420–3, 72 FR 17019, Apr. 6, 2007]

§ 420.27 Launch site location review—information requirements.

An applicant shall provide the following launch site location review information in its application:

(a) A map or maps showing the location of each launch point proposed, and the flight azimuth, IIP, flight corridor, and each impact range and impact dispersion area for each launch point;

(b) Each launch vehicle type and any launch vehicle class proposed for each launch point;

(c) Trajectory data;

(d) Wind data, including each month and any percent wind data used in the analysis;

(e) Any launch vehicle apogee used in the analysis;

(f) Each populated area located within a flight corridor or impact dispersion area;

(g) The estimated casualty expectancy calculated for each populated area within a flight corridor or impact dispersion area;

(h) The effective casualty areas used in the analysis;

(i) The estimated casualty expectancy for each flight corridor or set of impact dispersion areas; and

(j) If populated areas are located within an overflight exclusion zone, a demonstration that there are times